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NOTES ON TROPICAL AMERICAN ORCHIDS

BY

CHARLES SCHWEINFURTH

AS A RESULT OF studies on the orchids of the American tropics, the following nomenclatorial notes, comments, amplifications and new varieties have been deemed advisable.

Fuertesella pterichoides *Schlechter* in Urban Symb. Antill. 7 (1913) 493.

Cranichis grandiflora Ames & Schweinfurth in Sched. Orch. 8 (1925) 8, fig. 2.

Fuertesella grandiflora Schlechter in Fedde Repert. 21 (1925) 331.

A careful comparison of the type collection of *Cranichis grandiflora* with an isotype collection of *Fuertesella pterichoides* shows that the two species are synonymous.

In this collection of *Fuertesella pterichoides*, one plant which is considerably taller than *Cranichis grandiflora* has a leaf about 3.7 cm. long with a petiole about 4.5 cm. long, while another plant which is but slightly taller than *C. grandiflora* has a leaf about 2.3 cm. long with a petiole about 1.7 cm. long. *C. grandiflora* has a leaf almost mid-way between these extremes, the lamina being about 3 cm. long with the petiole about 1.5 cm. long.

The flowers of *Cranichis grandiflora* appear to be slightly larger than those of *Fuertesella pterichoides*.

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A variation in the shape of the leaf of this concept, which is commonly ovate or ovate-cordate, appears in a recently examined Cuban collection (*Brother Hioram* 7615) in which the lamina is narrowly elliptic with a cuneate base and is nearly 5 cm. long and 1.4 cm. wide.

Fuertesella pterichoides has been reported only from Santo Domingo, while *Cranichis grandiflora* originates in Oriente Province, Cuba.

Ponthieva diptera *Linden & Reichenbach filius* in Bonpl. 2 (1854) 278.

Ponthieva dicliptera Reichenbach filius in Flora 69 (1886) 548.

Ponthieva elata Schlechter in Fedde Repert. Beih. 7 (1920) 63; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 20, nr. 73.

The type description of *Ponthieva dicliptera* appears to agree well with isotype material of *P. diptera* and with a drawing from the Reichenbach Herbarium at Vienna. Reichenbach states that *P. diptera* has two calli near the apex of the lip instead of one, thus differing from *P. dicliptera*. However, both the drawing of typical *P. diptera* and several collections referred to that species show a single retuse callus.

The concept *Ponthieva elata* seems to be only a vegetatively larger form of *P. diptera*, which, despite Schlechter's assertion to the contrary, has petals very like those of *P. diptera*.

This species, which was originally recorded from Colombia, has been found in Cuba and lately in Peru.

Pleurothallis Dinotherii *Reichenbach filius & Warscewicz* in Bonpl. 2 (1854) 114, non *P. Dinotherii* Reichenbach filius sensu Lindley Fol. Orch. Pleurothallis (1859) 32, no. 191.

Pleurothallis diptera Lindley Fol. Orch. Pleurothallis (1859) 44, no. 279.

Humboldtia Dinotherii O. Kuntze Rev. Gen. Pl. 2 (1891) 667.

Humboldtia diptera O. Kuntze Rev. Gen. Pl. 2 (1891) 667.

Pleurothallis tricaudata Schlechter in Fedde Repert. Beih. 9 (1921) 77; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 115, nr. 451.

Judging by the type description of *P. Dinotherii* together with records of that species from the Reichenbach Herbarium in Vienna, it would seem that the description of *P. Dinotherii* given by Lindley (l.c.) represents a different concept. Lindley's material apparently had broader sepals and a dissimilar lip.

As represented by a photograph of the type, *Pleurothallis diptera* differs from *P. Dinotherii* in the smaller size of the leaves and the possibly greater length of the sepals. The latter organs are of precisely the same form in the two concepts. The lateral sepals, however, are described and figured as deflexed in *P. Dinotherii*, while in *P. diptera* some of the lateral sepals are only slightly decurved. In the absence of definite or striking morphological characters, however, all attempts to separate *P. diptera* from *P. Dinotherii* satisfactorily seem futile.

Dr. Kränzlin originally referred to *Pleurothallis diptera* the collection (*Weberbauer 6827*) which was later made by Schlechter the type of *P. tricaudata*. After examining material of this Weberbauer number which was seen by both Kränzlin and Schlechter, I am convinced that Kränzlin was correct in referring the collection to *P. diptera*. Indeed, the only discrepancies between the two concepts is that the flowers of the Weberbauer collection have a lip which is broadly cuneate, rather than subcordate, below.

Pleurothallis divaricans *Schlechter* in Fedde Repert. 10 (1912) 387; ex Mansfeld in Fedde Repert. Beih. 58 (1930) t. 30, nr. 120.

In several collections from Peru which are certainly referable to this species, some discrepancies from the original description and floral analysis are noted. The stems (described as 4–7 cm. long) range from 3.5 to 10 cm. long; the elliptic-lanceolate mature leaves (normally much longer) are occasionally only 3.5 cm. long; the inflorescences (described as little shorter than the leaves) often more or less surpass the leaves; the petals are oblong-ob lanceolate or oblong-spatulate and more or less acute (rather than oblong-ligulate and obtuse); and the lip when expanded is rhombic-obovate and abruptly narrowed above to an acute or apiculate apex (not suborbicular).

All of these collections came from near the type locality at altitudes ranging from 1200 to 1700 meters.

Pleurothallis macrorhiza *Lindley* in Hooker Journ. Bot. 1 (1834) 9; Fol. Orch. Pleurothallis (1859) 43, no. 273.

Humboldtia macrorhiza O. Kuntze Rev. Gen. Pl. 2 (1891) 667.

? *Pleurothallis Millei* *Schlechter* in Fedde Repert. 15 (1917) 52, non *Schlechter* in Fedde Repert. 14 (1915) 131.

Pleurothallis rhizomatosa *Schlechter* in Fedde Repert. Beih. 8 (1921) 62; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 84, nr. 327.

Judging by the description (without any actual record), it appears very probable that the concept described as *Pleurothallis Millei* by *Schlechter* in 1917 is referable to *P. macrorhiza*. It seems to differ, however, in having narrower leaves and somewhat smaller flowers.

The concept *P. rhizomatosa* (of which I have seen isotype material) is surely referable to *P. macrorhiza*, of which we have a record of the type. Its flowers appear to be of about the same size, and its petals are oblong-cuneate like those of *P. macrorhiza* rather than obovate-spatulate as described and figured for *P. rhizomatosa*.

A Peruvian collection (*Macbride & Featherstone 2455*) is also referable to *P. macrorhiza*, but has larger (especially broader) leaves and the obovate-spatulate petals described and figured for *P. rhizomatosa*.

This species, described from and probably rather frequent in Ecuador, is now recorded from Peru.

Pleurothallis semipellucida *Reichenbach filius* in *Linnaea* 22 (1849) 823—*Lindley Fol. Orch. Pleurothallis* (1859) 7, no. 27.

Humboldtia semipellucida O. Kuntze *Rev. Gen. Pl.* 2 (1891) 668.

Pleurothallis complicata Rolfe in *Mem. Torr. Bot. Club* 6 (1896) 121.

An examination of isotype material of *Pleurothallis complicata* shows that it should not be separated from *P. semipellucida*. The single noteworthy difference is that typical *P. semipellucida* has petals which are distinctly clavate and more or less obtuse at the much-thickened apex (although they vary in degree even in a single collection), while those of *P. complicata* are linear and but very slightly broadened above.

A large series of Peruvian collections referable to *P. semipellucida* shows a range of petals varying from conspicuously clavate and much-thickened to linear and scarcely dilated or thickened above.

This species, described from Venezuela, occurs in Trinidad, appears to be frequent and widely distributed in Peru, and extends to Bolivia (as *P. complicata*).

Pleurothallis xanthochlora *Reichenbach filius* in *Linnaea* 22 (1849) 823—Lindley *Fol. Orch.* *Pleurothallis* (1859) 7, no. 26.

Humboldtia xanthochlora O. Kuntze *Rev. Gen. Pl.* 2 (1891) 668.

Pleurothallis huanucoensis Schlechter in *Fedde Repert. Beih.* 9 (1921) 75; ex Mansfeld in *Fedde Repert. Beih.* 57 (1929) t. 114, nr. 448.

It seems to me that *Pleurothallis huanucoensis* cannot be separated from *P. xanthochlora*. The only significant difference between these concepts is that *P. huanucoensis* has erect racemes of white flowers, whereas *P. xanthochlora* has divaricate racemes of greenish yellow flowers.

The lip of *P. xanthochlora* appears to vary from having a distinct lateral tooth on each side to being subentire or even entire in outline. Peruvian collections referable to this species have flowers ranging from greenish white to pale yellow.

Although the type of *P. xanthochlora* was described from Venezuela, several Peruvian collections have since been made.

Diothonea gratissima *Reichenbach filius* in *Bot. Zeit.* 10 (1852) 772, *ampl. C. Schweinfurth*.

Unfortunately, this species was so inadequately described that it is impossible to gain a definite conception of it from the original source alone and no subsequent amplification has appeared. In the Ames Herbarium, however, there are records from the Reichenbach Herbarium in Vienna which undoubtedly represent the type of *D. gratissima*; and these, except for slight discrepancies in some of the lips give a fairly definite idea of a concept which has been widely referred to in literature. For purposes of clarification, therefore, I herewith give the following amplified description.

Stems stout, often much branched, entirely concealed by loose cylindric leaf-sheaths. Leaves numerous, distichous, spreading, oblong-linear, abruptly bilobulate at the apex, up to 6 cm. long. Inflorescence terminal, racemose, more or less recurved, several-flowered. Flowers campanulate. Dorsal sepal ovate, acute. Lateral sepals obliquely ovate-lanceolate, long-acuminate. Petals lanceolate-ovate, acute or acuminate. Lip round-obovate, more or less lobed in front, retuse at the apex, commonly biauriculate and more or less cuneate at the concave base. Column short, curved, with the lateral wings adnate below to the base of the lip.

In the original description no hint as to the source of the plant is given. The words, "Leipzig, in Mauricium," which are cited, seem to imply that the species was described from a garden specimen. We have a record (as stated above) of a dried plant together with floral analyses labelled *Diothonea gratissima* from the Reichenbach Herbarium in Vienna. Yet, Schlechter (in Fedde Repert. Beih. 8 (1921) 66) says "Das Original der *D. gratissima* Rehb.f. befindet sich im Dahlem-Herbar. Es ist von Humboldt und Bonpland auf dem Quindiu-Passe in Colombia gesammelt."

***Diothonea nutans* (Lindl.) C. Schweinfurth comb. nov.**

Hemiscleria nutans Lindley Fol. Orch. Hemiscleria (1853), p. 1.

Epidendrum Hemiscleria Reichenbach filius in Walpers Ann. 6 (1862) 383.

Epidendrum rhopalorhachis Kränzlin in Fedde Repert. 1 (1905) 180.

Following Bentham & Hooker f. (Gen. Pl. 3 (1883) 523), it seems to me that the concept forming the monotypic genus *Hemiscleria* should be included in *Diothonea*.

Therefore, the new combination *Diothonea nutans* is proposed.

The concept, *Epidendrum rhopalorhachis*, has already been referred to *Hemiscleria nutans* (Schlechter in Fedde Repert. Beih. 9 (1921) 145).

As far as known, this species is restricted to Peru.

***Laelia moyobambae* (Schltr.) C. Schweinfurth comb. nov.**

Schomburgkia Moyobambae Schlechter in Fedde Repert. Beih. 9 (1921) 97; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 123, nr. 482.

In accordance with the recently suggested policy of including the concept *Schomburgkia* (1838) in the older genus *Laelia* (1831)¹, I hereby make the necessary transfers of this and the following Peruvian species:

***Laelia Weberbaueriana* (Kränzl.) C. Schweinfurth comb. nov.**

Schomburgkia Weberbaueriana Kränzlin in Engler Bot. Jahrb. 37 (1906) 527.

***Scaphyglottis Antonii* Schlechter** in Fedde Repert. Beih. 9 (1921) 78; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 115, nr. 453.

Scaphyglottis loretoensis Schlechter in Fedde Repert. Beih. 9 (1921) 79 (as *loretorensis*); ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 116, nr. 454.

Judging by a careful comparison of the type descriptions of these two concepts, the only difference between them lies in vegetative size. Whereas *Scaphyglottis Antonii* is described as being 25–35 cm. tall with slender-cylindric stems up to 18 cm. long, *S. loretoensis* is cited

¹ L. O. Williams in Darwiniana 5 (1941) 74.

as being 8–12 cm. tall with narrowly fusiform stems up to 4 cm. long. The leaves of the two forms appear to be closely similar and the flowers are nearly identical.

However, a Peruvian collection (*Killip & Smith 23625*) which I refer to *S. Antonii*, consists of one small plant which is a good match for *S. loretoensis* (only with slender stems), together with other plants which are about 35 cm. high as in *S. Antonii*. The flowers of these plants are inseparable.

Judging by the frequent conspicuous degree of variation in the vegetative proportions shown by plants of a single species in *Scaphyglottis*, it seems to be the wise course to consider *S. loretoensis* as merely a small form of *S. Antonii*.

Scaphyglottis cuneata Schlechter in Beih. Bot. Centralbl. 36, Abt. 2 (1918) 398.

Isochilus prolifer R. Br. in Aiton Hort. Kew. ed. 2, pt. 5 (1813) 209, excl. synonym.—Lindley in Bot. Reg. 10 (1824) t. 825, nec *Epidendrum proliferum* Sw., nec *Cymbidium proliferum* Sw.

Isochilus proliferum Lindley Gen. & Sp. Orch. Pl. (1831) 113, excl. synonym. in part.

Scaphyglottis prolifera Cogniaux in Martius Fl. Bras. 3, pt. 5 (1898) 15.

Tetragamestus gracilis Schlechter in Beih. Bot. Centralbl. 36, Abt. 2 (1918) 400.

Scaphyglottis Wercklei Schlechter in Fedde Repert. Beih. 19 (1923) 28.

Scaphyglottis gracilis Schlechter in Fedde Repert. Beih. 19 (1923) 28.

Ponera mapiriensis Kränzlin in Fedde Repert. 25 (1928) 22.

Scaphyglottis Wercklei Schltr. var. *major* C. Schweinfurth in Bot. Mus. Leaflet. Harv. Univ. 4 (1937) 117.

The widespread species known as *Scaphyglottis prolifera*, illustrated by Lindley (as *Isochilus prolifer*, l. c.) is an entirely different plant from *Epidendrum proliferum* Sw., upon which it was erroneously based. This concept, consequently, must have a new name. The next oldest designation not founded on *Epidendrum proliferum* is selected, namely *S. cuneata*.

Except for *Scaphyglottis Wercklei* and its variety, the above names have already been reduced to synonymy (Correll in Bot. Mus. Leaflet Harv. Univ. 9 (1941) 148).

Scaphyglottis Wercklei differs from the typical form of *S. cuneata* only in lacking a callus on the lip. This structure, however, seems to be extremely variable when it is present and may be quite inconspicuous or lacking in certain collections. It seems advisable, therefore, to relegate both this concept, and its variety, to the polymorphic *S. cuneata*.

This species occurs throughout Central America from Guatemala and British Honduras to Panama; in Grenada and Trinidad; and in Colombia, Venezuela, British Guiana, Surinam, Brazil, Bolivia and Peru.

Scaphyglottis Huebneri Schlechter in Beih. Bot. Centralbl. 42, Abt. 2 (1925) 95.

A number of collections from eastern Peru (Departments of Junín and Loreto) have been referred to this species. Altogether they show marked variation in vegetative size and in floral details, and accordingly it seems advisable to add a few supplementary notes to the original description.

The lower part of the stems (even of the abbreviated superposed members) is clothed by several loose imbricating scarious evanescent sheaths, of which the upper ones are articulated to short blades. The leaves, which are gradually narrowed toward the apex, reach a length

of 24 cm. and vary in width from 3 to 7 mm. The flowers seem to be invariably somewhat larger than those described. The sepals are about 5.5 mm. or less in length. The petals, which are only slightly shorter than the sepals, are nearly always sharply acute or apiculate. The lip, which is about as long as the sepals, has a mid-lobe which is commonly semiorbicular to ovate and is always more or less sharply acute. The color of the flowers ranges from greenish or whitish to pale yellow often tinged with pink or pale lilac. The altitude of the habitat ranges from 100 to 1300 meters.

Orleanesia yauaperyensis *Rodrigues* in *Vellozia* ed. 2, pt. 1 (1891) 124—*Cogniaux* in *Martius Fl. Bras.* 3, pt. 5 (1898) 6, t. 3, fig. 1.

There has recently come to hand a single Peruvian plant which seems to be referable to the above Brazilian species. It differs from the diagnosis of the type, however, in having eight leaves, instead of four, the blades being somewhat larger (up to 13 cm. long and 2 cm. wide) with an obtusely bilobulate, rather than obliquely acute, apex. The flowers also are slightly smaller than those of the type, the segments being about 6 (instead of 7–8) mm. long. Although no pollinia were figured nor described in the type citation of this species, those seen in the Peruvian plant were four in number, of which the inner pair were larger. This relationship appears to be exactly reversed in the characterization of *Orleanesia* (*B. Rodr. Gen. et Sp. Orch. Nov. 1* (1877) 63) where the two outer pollinia are indicated as larger.

PERU: Department of Loreto, vicinity of Iquitos, at 100 meters altitude, on a dead tree, in a clearing, flowers mignonette and dark violet, November to December, 1936, *G. Klug 10021*.

Polystachya cerea *Lindley* in *Bot. Reg.* 26 (1840) Misc. p. 86.

? *Polystachya caracasana* Reichenbach filius in Bonpl. 2 (1854) 15; in Walpers Ann. 6 (1863) 641.

Polystachya minor Fawcett & Rendle in Journ. Bot. 48 (1910) 106; Fl. Jam. 1 (1910) 49, t. 7, figs. 6, 7.

Polystachya guatemalensis Schlechter in Fedde Repert. 17 (1921) 141.

Polystachya ecuadorensis Schlechter in Fedde Repert. Beih. 8 (1921) 90; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 95, nr. 370.

Polystachya panamensis Schlechter in Fedde Repert. Beih. 17 (1922) 49.

There is no record at present of typical *Polystachya caracasana* in the Reichenbach Herbarium. Although this concept appears to be very close to *P. cerea*, of which we have seen a drawing of the type in the Lindley Herbarium, it seems to differ in having a subcordate base to the lip and a long-petioled base to the leaves.

Polystachya minor, as described and figured by Fawcett & Rendle, differs from *P. cerea* only in being a much larger plant with a paniculate rather than a racemose inflorescence. However, the degree of vegetative size and the simple or compound character of the inflorescence is of no specific weight in *Polystachya*, for dwarf racemose plants appear in the same collection with large paniculate forms.

The concept, *Polystachya guatemalensis*, is represented in the Ames Herbarium by an analytical drawing made under the supervision of Dr. Schlechter. It is a large plant analagous to *P. minor*, but is described as having obtuse sepals, unlike those of *P. minor*. However, the drawing shows these organs as being acute. The only noteworthy difference between these species is that the mid-lobe of *P. guatemalensis* is described and shown as subcuneate-quadrate rather than ovate-subquadrate or elliptic-ovate as in *P. minor*. In view of the fact that the

mid-lobe is recurved in natural position, its exact shape is capable of various interpretations.

The plant named *Polystachya ecuadorensis* Schltr. is undoubtedly referable to *P. cerea*, having exactly the form and proportions of *P. minor*.

Polystachya panamensis, also represented in the Ames Herbarium by a drawing made under the supervision of Dr. Schlechter, appears to be inseparable from the *P. minor* form. The only differences are that its sepals and petals are described as obtuse and the basal callus on the lip as trilobulate.

This widespread and variable species extends from Mexico through Central America to Panama and the West Indies and to the northern portions of South America.

Polystachya nana (*Poepp. & Endl.*) *Reichenbach filius* in Walpers Ann. 6 (1863) 638.

Encyclia nana Poeppig & Endlicher Nov. Gen. ac Sp. Pl. 2 (1838) 10, t. 113 A.

Stelis foliosa Lindley in Ann. & Mag. Nat. Hist. 2 (1839) 330, t. 17.

Polystachya foliosa Reichenbach filius in Walpers Ann. 6 (1863) 640—Cogniaux in Martius Fl. Bras. 3, pt. 4 (1895) 316.

Dendrorchis nana O. Kuntze Rev. Gen. Pl. 2 (1891) 659.

The concept *Stelis foliosa* is described and figured as having the sepals equally large, whereas *Encyclia nana* has the dorsal sepal distinctly narrower than the lateral sepals. However, the dorsal sepal of *Polystachya foliosa* is described by Cogniaux and invariably appears, in all of the specimens which I have seen referred to that species from the West Indies and South America, as distinctly narrower than the lateral sepals.

In *S. foliosa* the mid-lobe of the lip is definitely the largest, while in *Encyclia nana* the lobes of the lip are described as equal. In the floral analysis of *E. nana*, however, the mid-lobe of the lip appears to be distinctly larger than the lateral lobes. In specimens of *Polystachya foliosa* in the Ames Herbarium the degree of excess in size of this lobe over the lateral lobes appears to vary considerably.

Whereas the flowers of *Stelis foliosa* were described as greenish, those of *Encyclia nana*, were cited as sulphur-colored. In a large series of specimens referable to *Polystachya nana* the color of the flowers (wherever noted) varies from yellow to orange.

In the types of both *Encyclia nana* and *Stelis foliosa* the inflorescence is described and shown as a simple raceme. In *Polystachya foliosa*, however, the inflorescence is described by Cogniaux as lightly branching and more rarely simple. This variation appears frequently in the specimens of *P. foliosa* examined, even in a single collection.

Considerable variability also appears in the proportions of the leaves of *P. foliosa*, the range being from elongate-linear with a width of 2 mm. to linear-elliptic with a width of over 9 mm. Also, the inflorescence varies from being much shorter than the leaves to distinctly exceeding them.

In *Stelis foliosa* almost the entire central longitudinal area of the lip was described and shown as densely and evenly glandular-downy or papillose. In *Encyclia nana* the farinaceous callus is basal. In all of the specimens which I have seen referred to *Polystachya foliosa* there is a prominent basal farinaceous callus, as in *Encyclia nana*.

It seems advisable, therefore, to consider these variable forms as conspecific.

It appears highly probable that the Brazilian *Poly-*

stachya stenophylla Schltr. may also be referable to the variable *P. nana*, but I have seen no authentic material of the former concept.

The range of *Polystachya nana* extends from the West Indies (Bahamas, Cuba, Jamaica, Hispaniola, Grenada, Trinidad) to British Guiana (type of *Stelis foliosa*), Surinam, northern Brazil and Peru (type of *Encyclia nana*).

Galeandra Baueri Lindl. var. **piloso-columna**
C. Schaeinfurth var. nov.

Herba carinis duabus brevibus plus minusve arcuatis atque columnae superficie anteriore plus minusve longe pilosa a specie differt.

Plant very similar to *Galeandra Baueri* but distinguished by having a pair of short more or less arcuate keels (instead of straight elongate keels) on the disc of the lip and especially by having a more or less prominently pilose anterior surface of the column.

This form is perhaps referable to *Galeandra dives* Reichb. f. (in Bonpl. 2 (1854) 98), in the description of which there is no reference to the column. I have seen no record of this concept. *G. dives* is treated as a synonym of *G. Baueri* Lindl. by Cogniaux in Mart. Fl. Bras. 3, pt. 4 (1895) 298.

PERU: Junín: Chanchamayo Valley, "1924-1927," *Carlos Schunke* 534 (no leaves present) (type in Herb. Field Mus. No. 571592); same locality, at 1800 meters altitude, "Sept., 1924-1927," *Schunke s.n.*; La Merced, Hacienda Schunke, at about 1200 meters altitude, "Leafless epiphyte. Fls. yellowish-brown, the inner part light, the outer dark," August 27-September 1, 1923, *J. Francis Macbride* 5599 (specimen consisting of a single flower preserved in alcohol).

Bletia catenulata Ruiz & Pavon Syst. Veg. (1798) 229—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1901) 350.

Bletia sanguinea Poeppig & Endlicher Nov. Gen. ac Sp. Pl. 1 (1835) 56, t. 95.

Bletia Sherrattiana Bateman in Bot. Mag. 93 (1867) t. 5646.

Regnellia purpurea Rodriguez Gen. & Sp. Orch. Nov. 1 (1877) 82, non *Bletia purpurea* DC.

Bletia Watsoni Hort. ex Orch. Rev. 2 (1894) 298.

Bletia Rodriguesii Cogniaux in Martius Fl. Bras. 3, pt. 5 (1901) 351, t. 74.

With the exception of *Regnellia purpurea* and *Bletia Rodriguesii*, all of the above names have previously been referred to the inadequately described *Bletia catenulata* Ruiz & Pav.

The concept *Regnellia purpurea*, being a true *Bletia* and widely different from *Bletia purpurea* DC., was given the name *Bletia Rodriguesii* by Cogniaux.

The plant which Reichenbach filius (in Bonplandia 4 (1856) 216) attributed to *B. catenulata*, was cited by Cogniaux as *Bletia Rodriguesii* (confined to Brasil). *B. Rodriguesii* is said to differ from *B. catenulata* in having narrower leaves, more obtuse petals, and more rounded lateral lobes of the lip which has three yellow lamellae instead of four white lamellae through the center. In the first place, the breadth of leaf, which is a variable character, is separated by only 5 mm. in the two contrasting species, according to the descriptions. Secondly, the petals of Peruvian specimens referable to *B. catenulata* are commonly broadly rounded at the apex (sometimes with a minute point at the tip). Again the lateral lobes of the lip are more or less broadly rounded at the apex, as in *B. Sherrattiana* from Colombia which was referred by Schlechter to *B. catenulata*. Finally, all of the Peruvian specimens of *B. catenulata* examined have from three to five low approximate thickened central nerves, which are called lamellae in the description. *B. catenulata* is described as having these keels whitish, whereas those of *B. Rodriguesii* are noted as yellow. In all of the Peru-

vian specimens referred to *B. catenulata* these keels, wherever a distinct color is noted, are described as yellow, as in *B. Sherrattiana*.

It appears to be the wise procedure, therefore, to recognize in this alliance only the single species *B. catenulata*.

Bulbophyllum Weberbauerianum Kränzl. var. **angustius** C. Schweinfurth var. nov.

Foliis angustioribus, floribus purpureis majoribus, petalis densissime fimbriatis, labello angustiore, columnae stelidiis brevioribus a specie differt.

Plant differing from the species in having narrower leaves (up to 4 cm. long and 7 mm. wide), larger purple flowers (dorsal sepal up to 1.85 cm. long, acute, with the lateral sepals only slightly larger than the dorsal sepal), densely fimbriate petals, longer narrower lip (up to 1.72 cm. long and 1 mm. wide above) and relatively short stelidia on the apex of the column.

BOLIVIA: Sailapata-Ayopaya, at 2000 meters altitude, on dry logs, flowers purple, November 1935, M. Cardenas 3294 (TYPE in Herb. Ames No. 48462; dupl. type in Herb. Gray No. 7290).

Warrea tricolor Lindley in Bot. Reg. 29 (1843) Misc. p. 14—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1901) 376, t. 81.

Maxillaria Warreana Loddiges ex Lindley Gen. & Sp. Orch. Pl. (1832) 148—Loddiges Bot. Cab. (1833) t. 1884—Hooker in Bot. Mag. 72 (1846) t. 4235.

Warrea speciosa Schlechter in Fedde Repert. Beih. 9 (1921) 98; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 123, nr. 483.

The Peruvian *Warrea speciosa* differs from the Brazilian *Maxillaria Warreana*, the type of *W. tricolor*, in having distinctly larger floral segments. These are said

to be about 3.5 cm. long and 2.3–3.2 cm. wide, whereas those of *W. tricolor* are described as 2–2.5 cm. long and 1.2–2 cm. wide. The sepals and petals of *W. speciosa* are described as obtuse, but they are figured as more or less acute—as they are in *W. tricolor*. Moreover, the segments of *W. speciosa*, as depicted, appear to be almost an exact counterpart of those which Cogniaux attributes to *W. tricolor*. Finally, the anterior part of the lip of *W. tricolor* (as *Maxillaria Warreana*) is traversed by verrucose fleshy lines as attributed to *W. speciosa*.

Apparently there is no morphological difference between the two concepts, but only a discrepancy in size. Size appears to be less important as a differentiating character since the flowers of a Peruvian specimen (*Williams 7338*) which I have examined are intermediate between the two concepts.

Eriopsis biloba *Lindley* in Bot. Reg. 33 (1847) t. 18—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1902) 586.

Pseudeiopsis Schomburgkii (as *Shomburgkii*) Reichenbach filius in Linnaea 22 (1849) 853.

Eriopsis Schomburgkii Reichenbach filius in Bonpl. 3 (1855) 67.

Eriopsis Wercklei Schlechter in Fedde Repert. 16 (1920) 447.

A careful examination of the Costa Rican *Eriopsis Wercklei*, as represented by an analytical drawing of the type made under the supervision of Dr. Schlechter, as well as by authentic material in the Ames Herbarium, show that this concept is referable to *E. biloba*, which is well illustrated and described. Apparently the only discrepancy between these concepts is that *E. Wercklei* is said to have longer leaves than *E. biloba*. Sometimes, also, the sepals and petals of *E. Wercklei* are slightly larger than those attributed to *E. biloba*.

A recent Peruvian collection (*Klug 3678*) referable to *E. biloba* differs from typical material in having a relatively elongate pseudobulb (up to 16 cm. tall) bearing three leaves (instead of two) near the summit. The leaves vary greatly, the two lower blades being elliptic-oblong and up to 44 cm. long and 7 cm. wide, whereas the upper leaf is narrow and about 30 cm. long and 3.4 cm. wide. The scape is also short, about 35 cm. tall.

PERU: San Martín: Zepelacio, near Moyobamba, at about 1100 meters altitude, epiphyte in mountain forest, flowers brown, yellow, green and white, June, 1934, G. Klug 3678.

Eriopsis sceptrum *Reichenbach filius & Warszewicz* in Bonpl. 2 (1854) 98—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1902) 588.

Eriopsis Helenae Kränzlin in Gard. Chron. ser. 3, 22 (1897) 98—Rolfe in Bot. Mag. 138 (1912) t. 8462.

The concept *Eriopsis Helenae* appears to differ from *E. sceptrum* only in the larger size of its flowers. In these the sepals are described as about 2 cm. long, whereas those of *E. sceptrum* seem to be 1.6 cm. or less long in the drawing of its flowers from the original sketches in the Reichenbach Herbarium. In these drawings, the sinus between the lobes appears to vary from being acute-angled (as described) to being rounded (as in *E. Helenae*). Although no mention of the vegetative parts of *E. sceptrum* appears in the description, the records of that species from the Reichenbach Herbarium show a cluster of roughly sketched elongate pseudobulbs similar to those of *E. Helenae* and they bear at the summit a pair of leaves which appear to be much shorter than those of *E. Helenae*.

A recent Peruvian collection (*Klug 1351*) has flowers of apparently the same size as those of *E. sceptrum* with a rounded sinus between the lobes (as in *E. Helenae*) and

a mid-lobe which varies from broadly truncate-obtuse to lightly retuse as specified in *E. sceptrum*. In these plants the pseudobulb is entirely enveloped by distichous sheaths (like the immature stems of *E. Helenae*); the leaves are oblong to elliptic-oblong, and shining in the dried specimen, and they attain a length of almost 50 cm. and a width of nearly 6 cm. The scape is about 60 cm. or less tall, as in *E. Helenae*, whereas that of *E. sceptrum* is noted as about 90 cm. tall. The pair of basal lamellae on the lip appear to be sometimes more or less recurved, as in *E. sceptrum*.

It appears reasonable, therefore, to consider *Eriopsis sceptrum* as including the larger-flowered *E. Helenae*.

PERU: Loreto, Mishuyacu, near Iquitos, at 100 meters altitude, in forest, flowers brown-yellow, May-June, 1930, G. Klug 1351.

Polycynis muscifera (*Lindl. & Paxt.*) *Reichenbach filius* in Bonpl. 3 (1855) 218; in Walpers Ann. 6 (1863) 618 *ampl. C. Schweinfurth*.

Cynoches muscifera (as *musciferum*) Lindley & Paxton in Paxton's Flow. Gard. 3 (1852-53) 28, fig. 248.

Since the original description of *Cynoches muscifera* lacks vegetative characters and is largely restricted to brief floral details, supplemented by a telling figure, it seems worthwhile to append a complete description of this concept based on several recent Peruvian collections.

Plant rather large. Roots fibrous, glabrous, rather slender. Pseudobulb pyriform-cylindric, unifoliate at the apex, clothed with evanescent sheaths, densely rugose when dry, 5 to over 6 cm. long. Leaf distinctly petioled; lamina elliptic, acute, cuneate below, up to 37 cm. long and 12 cm. wide, plicate; petiole 8-11.5 cm. long, slender, channelled. Scape lateral, basal, suberect to arcuate, subaxly to densely racemose above; peduncle provided with several remote close short sheaths, densely dark-

pubescent, up to 28.2 cm. long; raceme many-flowered, straight or more commonly arcuate or flexuous, the rachis being 34 cm. or less long. Flowers rather small for the genus, with spreading or reflexed segments, "pale bistre plentifully bestrewed with minute brown specks and freckles." Sepals membranaceous, dark-pubescent without. Dorsal sepal refracted, deeply cucullate, oblong-lanceolate, acute, up to 2 cm. long and 5 mm. wide when expanded. Lateral sepals broadly oblong-lanceolate, oblique, complicate-acute, up to 1.8 cm. long and 6 mm. wide. Petals oblanceolate-linear, slightly sigmoid, acute, up to 2.1 cm. long and 2.5 mm. wide. Lip up to 1.7 cm. long, deeply 3-lobed, sharply divided into a hypochile and epichile; hypochile at base with a pair of linear-falcate erect-spreading horns, above rather abruptly dilated into a pair of erect obliquely lanceolate or lanceolate-triangular acuminate lateral lobes, pubescent through the middle where dilated above into a relatively high fleshy pubescent semielliptic keel; epichile relatively large, hastate-ovate or triangular-ovate, simple or subtrilobed with more or less conspicuous rounded subbasal angles, acuminate to a complicate-acute apex, densely bearded except near the apex. Column very slender, arcuate, abruptly bialate at the apex, about 2 cm. long.

PERU: Junín, Chanchamayo Valley, at 1200–1500 meters altitude, *Carlos Schunke 1120, 1290, s.n.*; Schunke Hacienda, above San Ramón, at 1300–1700 meters altitude, in dense forest, *Schunke A69*.

***Gongora maculata* Lindley var. *bufonia* (Lindl.)
C. Schweinfurth comb. nov.**

Gongora bufonia Lindley in Bot. Reg. 27 (1841) t. 2
—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1902) 542.
Gongora bufonia Lindl. var. *leucochila* Lindley in Bot. Reg. 33 (1847) t. 17.

An intensive study has convinced me that the concept

G. bufonia is a variety of the widespread and variable *G. maculata*. It is distinguished from the latter species by the total or partial absence of horns near the base of the hypochile. In some of its forms there does not appear to be a vestige of the horns which are so prominent in *G. maculata*; in the illustration of the type of *G. bufonia* (l. c.) the horns are reduced to conical swellings, while some examples referable to this variety have rather well-developed conical protuberances. The variety *bufonia* appears to have often slightly larger flowers than *G. maculata*. Frequently, too, the hypochile is much lower at the base than at the apex.

Whereas *Gongora bufonia* was formerly credited only to Brazil, I have recently examined numerous collections of this concept from the Peruvian departments of Loreto and San Martín.

Xylobium foveatum (*Lindl.*) *Nicholson* Dict. Gard. 4 (1887) 225—Cogniaux in *Martius Fl. Bras.* 3, pt. 5 (1902) 469.

Maxillaria foveata Lindley in *Bot. Reg.* 25 (1839) Misc. p. 2—Lindley & Paxton in *Paxt. Flow. Gard.* 3 (1852–53) 70, sub no. 536.

Maxillaria concava Lindley in *Bot. Reg.* 30 (1844) Misc. p. 4.

Maxillaria stachyobiorum Reichenbach filius in *Bot. Zeit.* 10 (1852) 735.

Xylobium concavum Hemsley in *Godman & Salvin Biol. Centr.-Am.* 3 (1883) 252.

Xylobium stachyobiorum Hemsley in *Godman & Salvin Biol. Centr.-Am.* 3 (1883) 252.

Xylobium Filomenoi Schlechter in *Fedde Repert. Beih.* 9 (1921) 100; ex Mansfeld in *Fedde Repert. Beih.* 57 (1929) t. 124, nr. 487.

Judging from a photograph of the type of *Maxillaria*

concava from the Lindley Herbarium at Kew, this concept does not appear to be specifically distinct from the earlier *M. foveata* similarly represented in the Ames Herbarium. In the two records the scapes with their flowers seem to be nearly identical. The lateral sepals of *Maxillaria concava* are described as dorsally carinate near the apex, and no mention is made of such a character in *M. foveata*; but the photograph of the latter plant, when examined closely, indicates the presence of such an apical keel on the lateral sepals. Another apparent discrepancy between these concepts lies in the callus on the lip which consists of five raised lines in the drawing of the lip on the sheet of *M. foveata*, whereas an apically tridentate callus is depicted on the sheet of *M. concava*. This apparent difference is non-existent, however, for the lip of *M. foveata* is described as three or five times sulcate. Finally, the leaf of *M. concava* appears to be about twice as broad as that of *M. foveata*, but the proportions of the leaf in one collection of *Xylobium* often show similar discrepancies.

It has already been clearly shown that *Maxillaria stachyobiorum* is referable to the above species.

The concept *Xylobium Filomenoi*, described only from several inflorescences accompanied by a colored sketch, differs from *Maxillaria foveata* in having somewhat smaller flowers. In spite of minute disparities from *Xylobium foveatum* in the structure of the lip, it is apparent that this concept is synonymous with *X. foveatum*.

In the original description of *Maxillaria foveata* there was no mention of the pseudobulb, which apparently was lacking in the Lindley specimen. However, in the descriptions of *Maxillaria concava* and *M. stachyobiorum*, as well as in the numerous collections of this species from Central America (especially from Costa Rica and Panama) and from Peru, there is present an ovoid or oblong-

ovoid bifoliate or trifoliate pseudobulb which varies from 3 to 9 cm. in length.

This species appears to be very variable and widespread, being recorded from Mexico and Guatemala (type of *Maxillaria concava*) through Central America to Panama (type of *M. stachyobiorum*); from Jamaica; from the South American countries of British Guiana (type of *M. foveata*), Venezuela, Colombia and Peru (type of *Xylobium Filomenoi*).

Xylobium pallidiflorum (*Hook.*) *Nicholson* Dict. Gard. 4 (1887) 225—Cogniaux in Urban Symb. Antill. 6 (1910) 588.

Maxillaria pallidiflora Hooker in Bot. Mag. 55 (1828) t. 2806.

Maxillaria stenobulbon Klotzsch in Ind. Sem. Hort. Berol. Append. Spec. Nov. (1853) 1.

Xylobium latifolium Schlechter in Fedde Repert. 27 (1929) 66.

The concept, *Maxillaria stenobulbon*, has already been reduced to the synonymy of this species.

A comparison between the typical West Indian *Maxillaria pallidiflora* (as exemplified by the plate) and the Bolivian *Xylobium latifolium* (as elucidated by the description) shows that the latter concept apparently differs only in having slightly smaller flowers.

Furthermore, a collection (*Hodge 2973*) from Dominica near St. Vincent, which is the type locality of *Maxillaria pallidiflora*, differs from *X. latifolium* only in having slightly longer scapes with white instead of yellow flowers which are somewhat larger than those of *X. latifolium*.

A Peruvian collection (*Klug 3619*) referable to *X. pallidiflorum* has variable vegetative proportions with leaf-blades ranging from elliptic (as in *X. latifolium*) to

oblanceolate, often much larger than those of *X. pallidiflorum*, and with sometimes very elongate petioles. The flowers, however, are said to be light green and orange, similar to those of *Maxillaria pallidiflora* and are but slightly larger in size.

It seems reasonable to conclude, therefore, that all of these collections, including some recorded from Venezuela and Ecuador, belong to a single variable concept.

***Xylobium squalens* (Lindl.) Lindley** in Bot. Reg. 11 (1825) sub t. 897—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1902) 468.

Dendrobium squalens Lindley in Bot. Reg. 9 (1823) t. 732.

Maxillaria squalens Hooker in Bot. Mag. 56 (1829) t. 2955.

Dendrobium carnosum Presl Symb. Bot. (1832) 35, t. 24.
Cyrtopera scabrilinguis Lindley Gen. & Sp. Orch. Pl. (1833) 189.

Maxillaria supina Poeppig & Endlicher Nov. Gen. ac Sp. 1 (1836) 39, t. 67.

Xylobium Houttei Makoy ex Mutel Mém. sur plus. Orch. 1 (1840) 16.

Maxillaria scabrilinguis Lindley in Bot. Reg. 30 (1844) Misc. p. 71.

Xylobium scabrilingue Schlechter in Orchis 7 (1913) 23.

Xylobium supinum Schlechter in Orchis 7 (1913) 24.

Xylobium carnosum Schlechter in Fedde Repert. Beih. 9 (1921) 160.

Except for *Xylobium carnosum* (based on *Dendrobium carnosum*) and *X. scabrilingue* (based on *Cyrtopera scabrilinguis*), all of the above concepts have previously been reduced to the synonymy of *X. squalens*.

The concept *Dendrobium carnosum*, which was described from material lacking a pseudobulb, appears to differ from *Xylobium squalens* only in having a longer

inflorescence, in the slightly shorter floral bracts and in the somewhat narrower dorsal sepal and petals. Therefore, it seems reasonable to consider this form as reducible to *X. squalens*.

Cyrtopera scabrilinguis, exemplified by a photograph of the type from the Lindley Herbarium at Kew, is a plant with a rather loose raceme, having flowers of apparently the same size and shape as those of *X. squalens*. Moreover, this record bears two drawings of the lip which appear nearly identical with the lip of *X. squalens*, a species which has a more or less compact raceme. In the photograph the floral bracts are indistinct, but under *Maxillaria scabrilinguis* they are described as shorter than the [pedicellate] ovary, unlike those of *X. squalens*, in which the floral bracts commonly more or less exceed the ovary. Several specimens determined as *X. scabrilingue* have a lip with the mid-lobe rather more ovate than obovate or oval as in *X. squalens*, but that portion when expanded approximates the mid-lobe of the latter species. Finally, the color of the flowers in both concepts, while apparently variable, is often closely similar.

It seems to be entirely logical, therefore, to regard *Xylobium scabrilingue* as conspecific with *X. squalens*.

This concept, like most widespread species, is very variable, both in vegetative and floral size. One Peruvian collection (*Klug 10123*) even has a pseudobulb bearing three leaves, instead of the usual two leaves. The color of the flowers varies from white to yellowish or pinkish, streaked with violet, the lip being much darker violet.

Xylobium squalens is recorded chiefly from South America (Brazil, Venezuela, Ecuador, Peru and Bolivia), with one record from Costa Rica in Central America.

***Xylobium squalens* (Lindl.) Lindl. var. *gracile* (Schltr.) C. Schweinfurth comb. nov.**

Xylobium gracile Schlechter in Fedde Repert. Beih. 8 (1921) 92; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 95, nr. 372.

This concept differs from the variable *X. squalens* in two particulars. First, it has unifoliate pseudobulbs, whereas *X. squalens* commonly has bifoliate (or very rarely trifoliate) pseudobulbs. Secondly, it has floral bracts three or four times shorter than the pedicellate ovary, whereas *X. squalens* has floral bracts that vary from little shorter than the pedicellate ovary (in the *X. scabrilingue* form) to longer than the flower. Judging from the floral analysis, the flower appears to be identical with a small form of *X. squalens*, except that the mid-lobe of the lip appears to be relatively slightly larger in proportion to the entire lamina.

Lycaste fimbriata (Poepp. & Endl.) Cogn. var. **peruviana** (Rolfe) C. Schweinfurth comb. nov.

Lycaste peruviana Rolfe in Kew Bull. (1910) 160.

Judging by the description, supplemented by several flowering scapes of *L. peruviana* (from the Kew Herbarium) which may be regarded as typical, it seems reasonable to consider this concept as a variant of *L. fimbriata*. The latter species appears to be very variable, both in vegetative and floral proportions, in the degree of tooth-ing of the mid-lobe of the lip and, to a lesser extent, in the color of the flowers.

There do not appear to be any morphological differences between the concepts, however, and the only disparities seem to be the strikingly smaller size of the leaves and floral segments of *L. peruviana*, whose sepals and petals are described as light tawny-brown, as contrasted with greenish, white or cream-color in *L. fimbriata*.

The exact source of *L. peruviana* is not recorded, the plant having been collected in Peru by Forget and introduced by Messrs. Sander & Sons of St. Albans, England.

Pityphyllum laricinum (*Kränzl.*) *Schlechter* in Fedde Repert. Beih. 7 (1920) 163.

Maxillaria laricina Kränzlin in Engler Bot. Jahrb. 54 (1916) Beibl. 117, p. 29.

An examination of isotype material of *Maxillaria laricina* Kränzlin shows that there are several misconceptions and inaccuracies in the type description (l.c.), and therefore it seems advisable to correct these misstatements.

Of first importance is the fact that the so-called abbreviated leafy branches, or “ramuli foliati abbreviati, folia . . . fasciculum foliorum *Laricis* cujusdam aemulantes,” actually represent small plants of a Bromeliad. The suspected identity of this epiphyte on an epiphyte was corroborated by Dr. Lyman B. Smith of the Gray Herbarium who tells me that in all probability the visitor is a species of *Tillandsia*.

Careful investigation also shows that the pseudobulbs are commonly bifoliate (not trifoliate) and mostly about 10 mm. (not 7 mm. or less) long. The leaves, which also appear on some of the cauline sheaths as well as on the pseudobulbs, are up to 1.5 cm. (rather than 1.2 cm.) long. The sepals are lanceolate and about 3.7 mm. (rather than 3 mm.) long. The petals, which are thinner in texture than the sepals, are linear and about 3 mm. (rather than 2.5 mm.) long. The lip, which is described as simple and oblong, is in reality constricted (and thus trilobulate) above the middle and ovate-elliptic in outline when flattened. It lacks a definite basal callus (as described), but has instead a pair of short arcuate folds near the constriction.

This little plant was transferred by Schlechter to the genus *Pityphyllum*, a segregate from *Maxillaria* on the basis of the minute flowers and footless column.

The species occurs in the Peruvian departments of Cajamarca (type of *Maxillaria laricina*) and Junín, fide Schlechter (in Fedde Repert. Beih. 9 (1921) 161.